WHAT IS CLAIMED IS:

1. A method for preventing dopant leaching from a doped structural film during fabrication of a microelectromechanical system, the method comprising:

producing a microstructure that includes the doped structural film, sacrificial material, and metallic material by a combination of techniques selected from the group consisting of deposition, patterning, and etching;

dissolving the sacrificial material with a release solution, the release solution comprising a substance destructive to the sacrificial material and acting as an electrolyte to form a galvanic cell with the doped structural film and metallic material acting as electrodes; and

suppressing effects of the galvanic cell by including a nonionic detergent mixed in the release solution.

2. The method recited in claim 1 wherein the release solution comprises an acid.

3. The method recited in claim 2 wherein the acid is HF.

4. The method recited in claim 1 wherein the doped structural film comprises a doped semiconductor.

5. The method recited in claim 4 wherein the doped structural film comprises doped silicon.

6. The method recited in claim 5 wherein the doped structural film comprises doped polysilicon.

7. The method recited in claim 1 wherein the sacrificial material comprises an oxide.

8. The method recited in claim 7 wherein the oxide is a silicon oxide.

9. The method recited in claim 7 wherein the oxide comprises alumina.

10. The method recited in claim 1 wherein the sacrificial material comprises a nitride.

11. The method recited in claim 10 therein the nitride is a silicon nitride.

12. The method recited in claim 7 wherein the sacrificial material comprises photoresist.

13. The method recited in claim 1 wherein the metallic material comprises gold.

14. The method recited in claim 1 wherein the metallic material comprises aluminum.

15. The method recited in claim 1 wherein the metallic material comprises copper.

16. The method recited in claim 1 wherein the metallic material comprises platinum.

17. The method recited in claim 1 wherein the metallic material comprises nickel

18. The method recited in claim 1 wherein the nonionic detergent comprises an alkyl group and a polyether-linked hydroxy group commonly linked to an aryl group.

19. The method recited in claim 18 wherein the nonionic detergent comprises a Triton X™ detergent.

20. The method recited in claim 18 wherein the nonionic detergent comprises Triton X-100.™

21. The method recited in claim 20 wherein the Triton X-100™ is included in the release solution with a concentration approximately between 0.01 and 0.1 vol. %.

22. The method recited in claim 1 wherein the nonionic detergent comprises Igepal CA-630.™

23. The method recited in claim 1 wherein the nonionic detergent comprises Nonidet P-40.™

24. The method recited in claim 1 wherein the nonionic detergent comprises a hydrophilic moiety and a hydrophobic moiety commonly linked to an aryl group.

25. The method recited in claim 1 wherein the microelectromechanical system is surface micromachined.

26. The method recited in claim 1 wherein the microelectromechanical system comprises part of a mirror array for use in a wavelength router.

27. A microelectromechanical system made according to the method recited in claim 1.

28. A method for preventing dopant leaching from a doped polysilicon structural film during fabrication of a surface micromachined mirror array having a plurality of moveable reflective surfaces for use in a wavelength router, the method comprising:

producing a mirror microstructure that includes the doped polysilicon, sacrificial silicon oxide material, and gold by a combination of techniques selected from the group consisting of deposition, patterning, and etching;

dissolving the silicon oxide material with a release solution, the release solution comprising HF and acting as an electrolyte forming a galvanic cell with the doped polysilicon structural film and gold acting as electrodes; and

suppressing effects of the galvanic cell by including a nonionic detergent mixed in the release solution.

29. The method recited in claim 28 wherein the nonionic detergent comprises an alkyl group and a polyether-linked hydroxy group commonly linked to an aryl group.

30. The method recited in claim 29 wherein the nonionic detergent comprises a Triton X™ detergent.

31. The method recited in claim 29 wherein the nonionic detergent comprises Triton X-100.™

32. The method recited in claim 28 wherein the nonionic detergent comprises a hydrophilic moiety and a hydrophobic moiety commonly linked to an aryl group.

33. A surface micromachined mirror array made according to the method recited in claim 28.

34. A method for fabricating a routing mechanism for use in a wavelength router of the type configured to receive, at an input port, light having a plurality of spectral bands and to direct subsets of the spectral bands to respective ones of a plurality of output ports by providing optical paths in a free-space optical train disposed between the input ports and the output ports and by providing the routing mechanism to direct a given spectral band to different output ports depending on a state of a dynamically configurable routing unit in the routing mechanism, the method comprising:

forming a plurality of such dynamically configurable routing units on a doped structural film with sacrificial material and metallic material by a combination of techniques selected from the group consisting of deposition, patterning, and etching;

dissolving the sacrificial material with a release solution, the release solution comprising a substance destructive to the sacrificial material and acting as an electrolyte forming a galvanic cell with the doped structural film and metallic material acting as electrodes; and

suppressing the effects of the galvanic cell by including a nonionic detergent mixed in the release solution,

whereby dopant leaching from the doped structural film due to the effects of the galvanic cell is suppressed.

35. The method recited in claim 34 wherein the nonionic detergent comprises an alkyl group and a polyether-linked hydroxy group commonly linked to an aryl group.

36. The method recited in claim 35 wherein the nonionic detergent comprises a Triton X™ detergent.

37. The method recited in claim 35 wherein the nonionic detergent comprises Triton X-100.™

38. The method recited in claim 34 wherein the nonionic detergent comprises a hydrophilic moiety and a hydrophobic moiety commonly linked to an aryl group.

39. The method recited in claim 34 wherein the release solution comprises HF, the doped structural film comprises doped polysilicon, the sacrificial material comprises a silicon oxide, the metallic material comprises gold, and the nonionic detergent comprises Triton X-100.™

40. A routing mechanism made according to the method recited in claim 39.

41. A routing mechanism made according to the method recited in claim 34.

42. A wavelength router comprising a routing mechanism made according to the method recited in claim 34.